MHF®-SW23 PLUG

Part No. Plug:20851-001R RF switch:20549-001E-**

Test Report

Product Specification no. PRS-2522

Rev.	ECN	Date	Prepared by	Checked by	Approved by
3	T24037	June 17, 2024	H. Takao	-	K. Yufu
2	T23011	March 6, 2023	H. Takao	K. Tanaka	Y. Hashimoto
1	T19036	March 6, 2019	H. Takahashi	T. Yamauchi	T. Hirakawa
0	T18127	November 8, 2018	Y. Nakagawa	T. Yamauchi	K. Yotsutani

.1. Purpose

To evaluate the performance of MHF-SW23 PLUGConnector in accordance with PRS-2522.

2. Specimen

(1) MHF-SW23 PLUG (Part No: 20851-001R)
Cable: AWG#32 coaxial cable (Jacket diameter 1.13 mm)

(2) MHF-SW23 SWITCH (Part No: 20549-001E-**)

3. Test Sequence

All the evaluations were performed in accordance with Table 1. Test Sequence.

4. Result

See Table 2-1 to 2-3, Graph 1 to 9. For the details of the testing conditions and requirements, see PRS-2522.
The “n” in the tables show the number of measurement points.

5. Conclusion

All the specimens met the requirements of PRS-2522.

Table 1 Test Sequence and Sample Quantity

Test Item	Group										
	A	B	C	D	E	F	G	H	J	K	L
Contact resistance				1,3		1,3,5	1,3	1,3	1,3	1,3	
Insulation resistance	1						4	4	4	4	
Dielectric withstanding Voltage	2										
VSWR		1									
Unmating force			1								
Durability				2							
Cable retention force					1						
Vibration						2					
Shock						4					
Thermal shock							2				
Dry heat								2			
Cold									2		
Humidity (Steady State)										2	
Saltwater spray											1
Specimen quantity.	5	5	5	5	5	5	5	5	5	5	5

※Numbers indicate test sequences

Table 2-1 Test Result

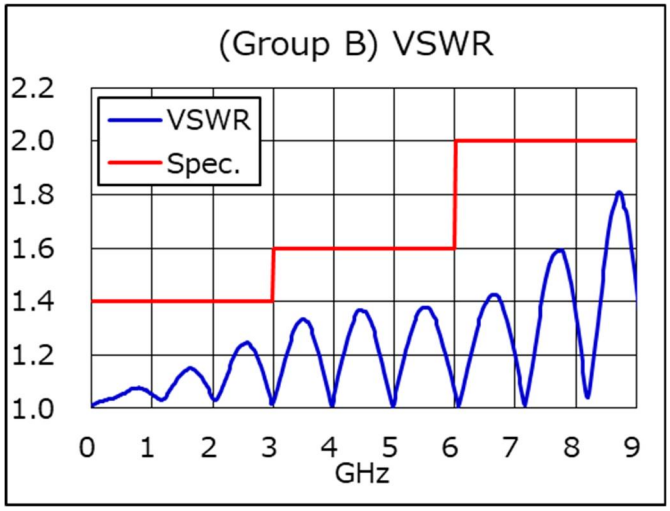
Group	Test items / Measurements	Specification	n	Unit	Data AVE.	Data MAX.	Data MIN.	Judgement
A	Insulation residence							
		1000MΩ MIN.	5	MΩ	10,000MΩ MIN.			Pass
	Dielectric withstanding voltage							
	Spec: No creeping discharge, flashover, no insulator breakdown shall occur.							
	After testing	-	5	-	No abnormality			Pass
B	VSWR							
	0.3～3.0GHz	1.4 MAX.	5	-	1.246	1.26	1.23	Pass
	3.0～6.0GHz	1.6 MAX.		-	1.385	1.41	1.37	Pass
	6.0～9.0GHz	2.0 MAX.		-	1.797	1.83	1.76	Pass
C	Unmating force							
	Initial	5 N MIN.	5	N	10.44	11.5	9.9	Pass
	After 30 cycles	3 N MIN.			7.68	8.0	7.4	Pass
D	Durability							
	Contact resistance of main contact							
	Initial	100mΩ MAX.	5	mΩ	22.23	22.4	22.1	Pass
	After testing	100mΩ MAX.			22.30	23.0	22.0	Pass
	Contact resistance of ground contact							
	Initial	100mΩ MAX.	5	mΩ	6.34	7.0	6.0	Pass
	After testing	100mΩ MAX.			6.12	6.4	6.0	Pass
E	Cable Retention Force							
		10 N MIN.	5	N	32.32	34.9	31.0	Pass

Table 2-2 Test Result

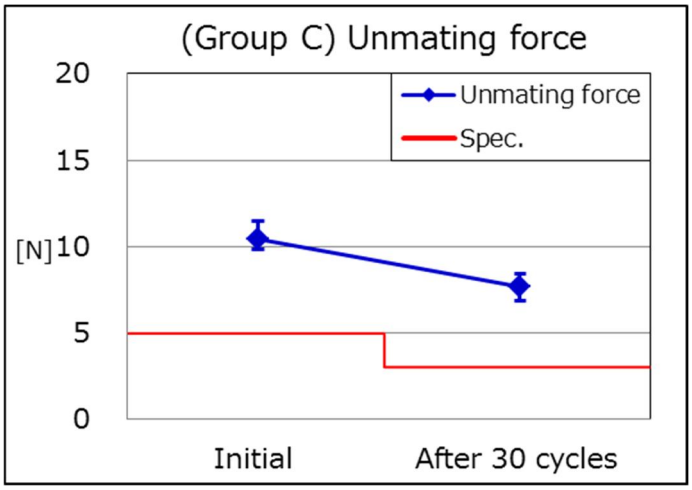
Group	Test items	Specification	n	Unit	Data			Judgement
	Measurements				AVE.	MAX.	MIN.	
F	Vibration, Shock							
	Contact resistance of main contact							
	Initial	100mΩ MAX.	5	mΩ	18.76	19.1	18.5	Pass
	After testing	100mΩ MAX.			21.66	23.4	20.7	Pass
	Contact resistance of ground contact							
	Initial	100mΩ MAX.	5	mΩ	6.92	7.1	6.6	Pass
	After testing	100mΩ MAX.			8.26	8.8	7.6	Pass
	Electrical discontinuity							
	Spec: No electrical discontinuity grater than 1μs shall occur.							
	During testing	-	5	-	No discontinity			Pass
	Appearance							
	Spec: No abnormality adversely affecting the performance shall occur.							
	After testing	-	5	-	No abnormality			Pass
G	Thermal shock							
	Contact resistance of main contact							
	Initial	100mΩ MAX.	5	mΩ	20.01	20.2	19.8	Pass
	After testing	100mΩ MAX.			19.63	19.8	19.4	Pass
	Contact resistance of ground contact							
	Initial	100mΩ MAX.	5	mΩ	7.00	7.3	6.8	Pass
	After testing	100mΩ MAX.			8.18	8.6	7.7	Pass
	Insulation residence							
	After testing	10MΩ MIN.	5	MΩ	1,000MΩ MIN.			Pass
	Appearance							
	Spec: No abnormality adversely affecting the performance shall occur.							
	After testing	-	5	-	No abnormality			Pass
H	Dry Heat							
	Contact resistance of main contact							
	Initial	100mΩ MAX.	5	mΩ	19.69	20.1	19.1	Pass
	After testing	100mΩ MAX.			18.99	19.4	18.5	Pass
	Contact resistance of ground contact							
	Initial	100mΩ MAX.	5	mΩ	6.99	7.2	6.8	Pass
	After testing	100mΩ MAX.			7.04	7.4	6.8	Pass
	Insulation residence							
	After testing	10MΩ MIN.	5	MΩ	1,000MΩ MIN.			Pass
	Appearance							
	Spec: No abnormality adversely affecting the performance shall occur.							
	After testing	-	5	-	No abnormality			Pass

Table 2-3 Test Result

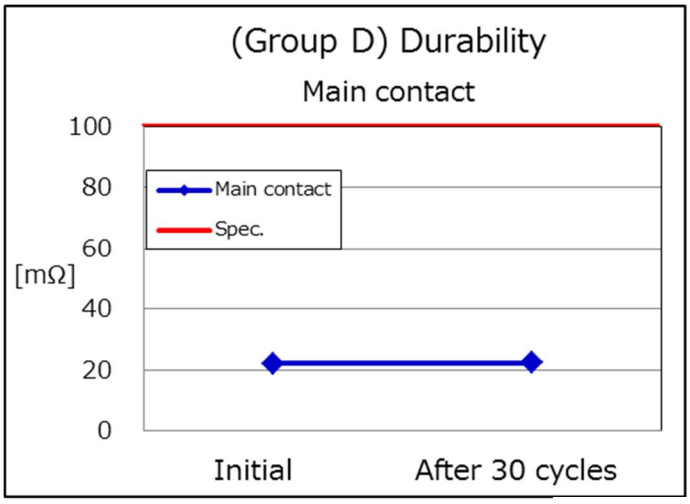
Group	Test items	Specification	n	Unit	Data			Judgement
	Measurements				AVE.	MAX.	MIN.	
J	Cold							
	Contact resistance of main contact							
	Initial	100mΩ MAX.	5	mΩ	18.93	19.2	18.7	Pass
	After testing	100mΩ MAX.			21.05	24.3	19.5	Pass
	Contact resistance of ground contact							
	Initial	100mΩ MAX.	5	mΩ	6.90	7.0	6.7	Pass
	After testing	100mΩ MAX.			6.79	7.1	6.5	Pass
	Insulation residence							
	After testing	10MΩ MIN.	5	MΩ	1,000MΩ MIN.			Pass
	Appearance							
	Spec: No abnormality adversely affecting the performance shall occur.							
	After testing	-	5	-	No abnormality			Pass
K	Humidity (Steady State)							
	Contact resistance of main contact							
	Initial	100mΩ MAX.	5	mΩ	19.59	20.2	18.3	Pass
	After testing	100mΩ MAX.			18.92	19.8	17.6	Pass
	Contact resistance of ground contact							
	Initial	100mΩ MAX.	5	mΩ	6.85	7.1	6.6	Pass
	After testing	100mΩ MAX.			6.67	7.1	6.4	Pass
	Insulation residence							
	After testing	10MΩ MIN.	5	MΩ	1,000MΩ MIN.			Pass
	Appearance							
	Spec: No abnormality adversely affecting the performance shall occur.							
	After testing	-	5	-	No abnormality			Pass
L	Salt water spray							
	Appearance							
	Spec: No abnormality adversely affecting the performance shall occur.							
	After testing	-	5	-	No abnormality			Pass

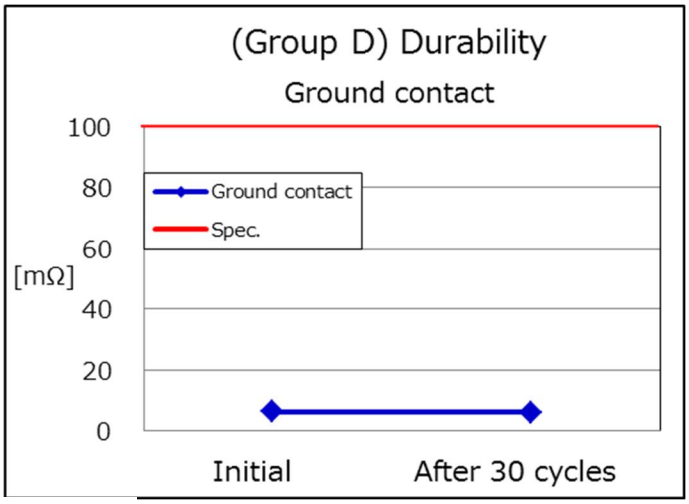


(Graph 1) VSWR

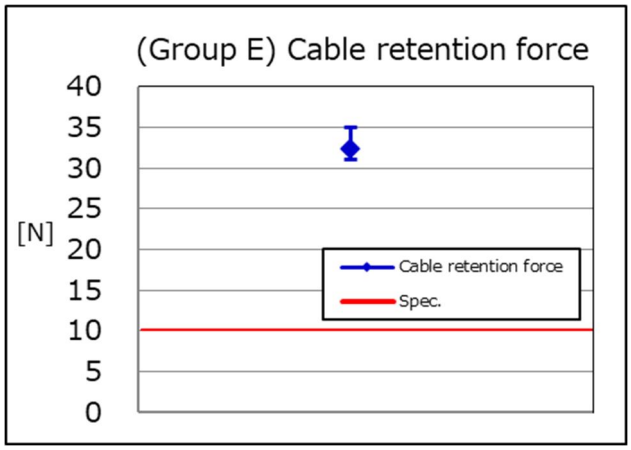


(Graph 2) Unmating force

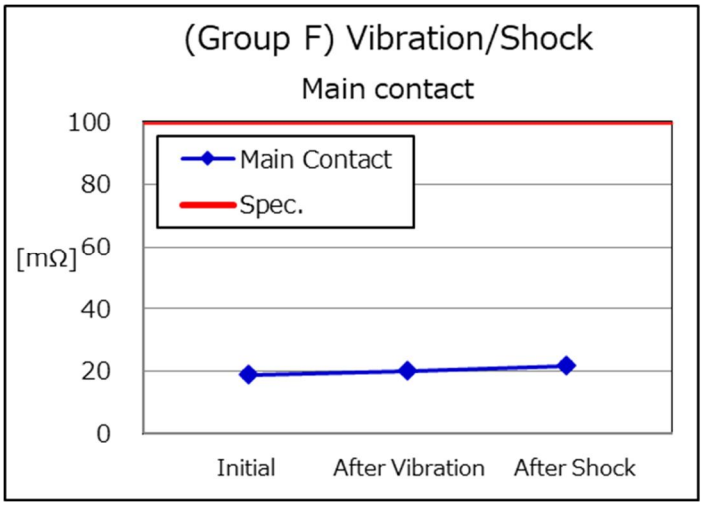


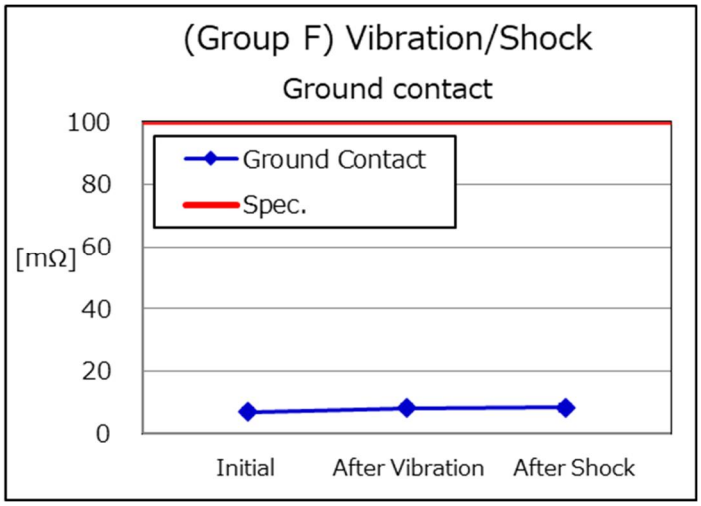


(Graph 3) Durability

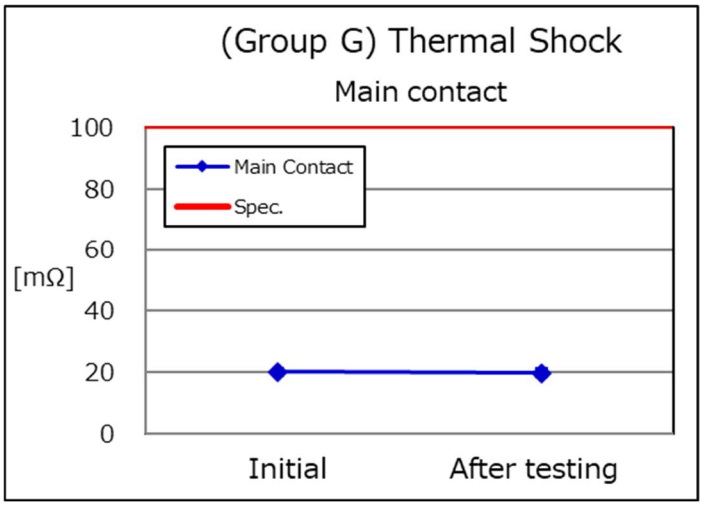


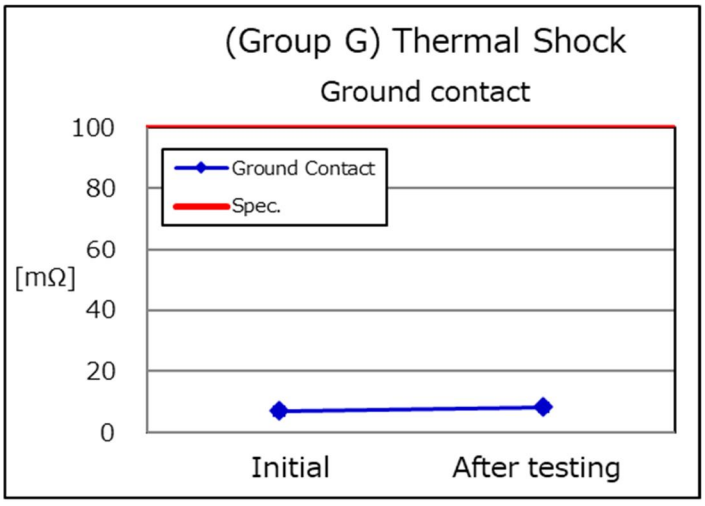
(Graph 4) Cable retention force



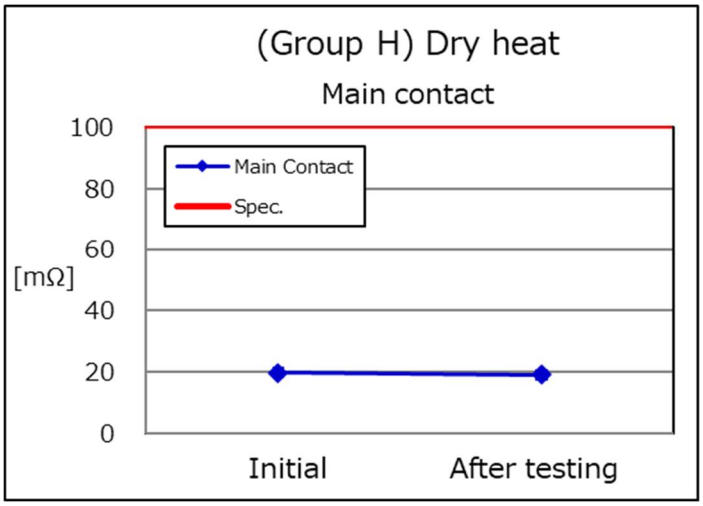


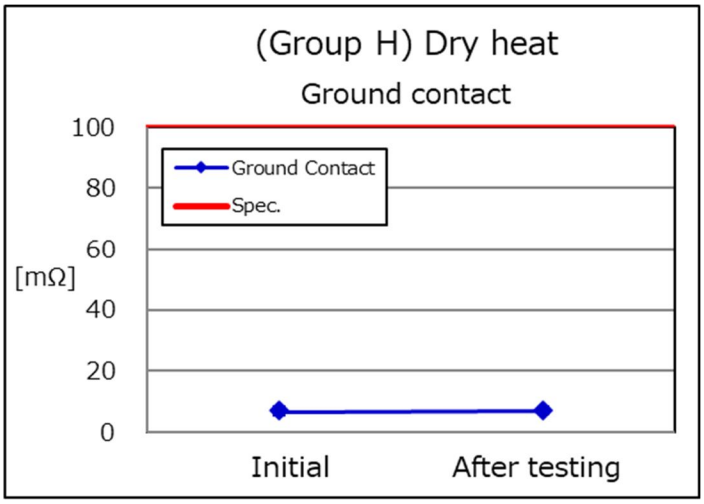
(Graph 5) Vibration / Shock



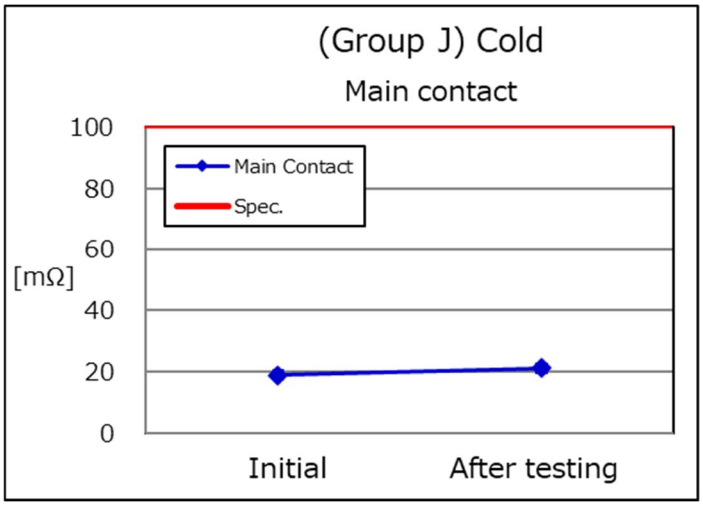


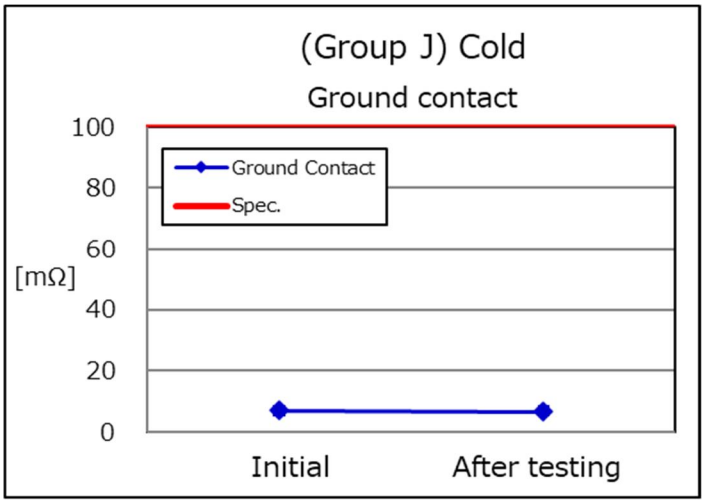
(Graph 6) Thermal Shock



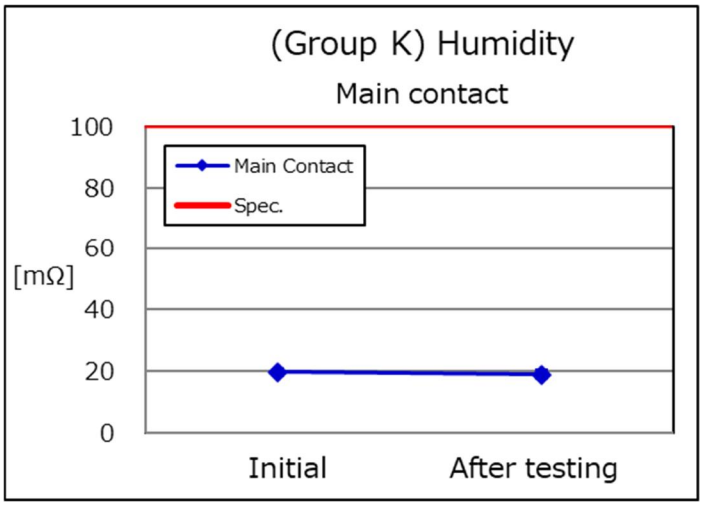


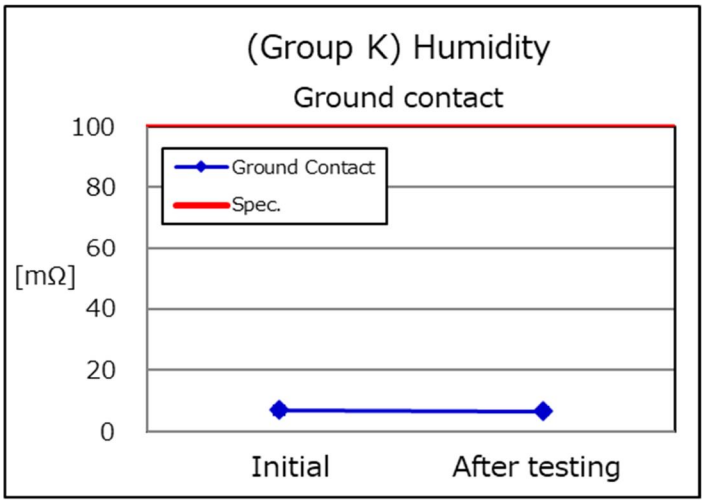
(Graph 7) Dry heat





(Graph 8) Cold





(Graph 9) Humidity